WHAT IS CLAIMED IS:

1.   A method, comprising the step of:
      iteratively defining a circuit path between a source node
5 and a destination node in a network comprising a plurality of
nodes interconnected by links, where each link has associated
with it a respective bandwidth utilization level, and where
links having bandwidth utilization levels exceeding a threshold
level are not used to define said circuit path.
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2.   The method of claim 1, further comprising the steps of:
      determining an ideal shortest path between the source node
and destination node;
      comparing the ideal shortest path to the iteratively
15 defined circuit path; and
      in the case of said iteratively determined circuit path
exceeding said ideal path by a threshold amount, adjusting said
threshold level and repeating said step of iteratively defining
said circuit path.
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3.   The method of claim 2, wherein said iteratively defined
circuit path is compared to said ideal circuit path by
comparing the number of intervening nodes within each
respective circuit path.
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4.   The method of claim 3, wherein said threshold amount
comprises a predetermined increase in the number of intervening
nodes.

30 5.   The method of claim 2, wherein said iteratively defined
circuit path is compared to said ideal circuit path by
comparing the latency within each respective circuit path.

6.   The method of claim 2, wherein said iteratively defined
35 circuit path is compared to said ideal circuit path by

comparing the number of links within each respective circuit path.

7.   A method, comprising the steps of:

5   determining a shortest path between a source node and a destination node, said shortest path comprising a plurality of intervening nodes coupled by respective links;

determining whether a respective bandwidth utilization level for each link within said circuit path is below a

10   threshold level; and

adapting said circuit path to avoid using links having respective bandwidth utilization levels above said threshold level.

15 8.   The method of claim 7, further comprising the step of:

determining whether a circuit path formed using links having respective bandwidth utilization levels below said threshold level exceeds an ideal shortest circuit path by a threshold amount; and

20   in the case of said circuit path exceeding said ideal path, adjusting said threshold levels and recalculating said circuit path.

9.   The method of claim 8, wherein said calculated circuit

25 path is compared to said ideal circuit path in terms of at least one of a number of nodes within said circuit paths, a latency associated with communications within said circuit paths and a number of links within said circuit paths.

30 10.   A method, comprising the steps of:

selecting, according to a shortest path algorithm, at least one link within a circuit path between a starting node and a destination node within a network comprising a plurality of nodes;

determining whether each selected link has associated with it a bandwidth utilization level exceeding a threshold level;

rejecting each selected link having associated with it a bandwidth utilization level exceeding said threshold level; and

5   repeating said steps of selecting and determining until a circuit path between said starting node and said destination node has been determined.

11.   The method of claim 10, further comprising the step of
10 increasing said threshold level in response to said determined circuit path exceeding an ideal circuit path by a predetermined amount.

12.   The method of claim 11, wherein said predetermined amount
15 comprises a difference in at least one of the number of nodes within said circuit paths, the latency associated with communications within said circuit paths and the number of links within said circuit paths.

20 13.   The method of claim 10, wherein said step of selecting comprises the step of selecting, according to said shortest path algorithm, each link within a circuit path between the last node of a partially formed circuit path and said destination node.

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14.   A method for determining a circuit path between a source node and a destination node in a network comprising a plurality of nodes interconnected by links, said method comprising the steps of:
30   (a) selecting, according to a shortest path algorithm, an available link to a next node within said circuit path;

     (b) determining if said selected link has associated with it a bandwidth utilization level below a threshold level;

(c) rejecting said selected link in the case of said respective bandwidth utilization level being below said threshold level; and

(d) repeating steps (a) through (c) until a circuit path
5 between said starting node and destination node has been determined.

15. The method of claim 14, further comprising the step of:

(e) determining if said circuit path exceeds an ideal
10 circuit path by a predetermined amount; and in the case of said circuit path exceeding said ideal circuit by said predetermined amount, adjusting said threshold levels and repeating steps (a) through (d).

15 16. The method of claim 15, wherein said predetermined amount comprises a difference in at least one of the number of nodes within said circuit paths, the latency associated with communications within said circuit paths, and the number of links within said circuit paths.
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17. A computer readable medium storing a software program that, when executed by a computer, causes the computer to perform a method comprising:

iteratively defining a circuit path between a source node
25 and a destination node in a network comprising a plurality of nodes interconnected by links, where each link has associated with it a respective bandwidth utilization level, and where links having bandwidth utilization levels exceeding a threshold level are not used to define said circuit path.
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18. The method of claim 17, further comprising the steps of:

determining an ideal shortest path between the source node and destination node;

comparing the ideal shortest path to the iteratively
35 defined circuit path; and

in the case of said iteratively determined circuit path exceeding said ideal path by a threshold amount, adjusting said threshold level and repeating said step of iteratively defining said circuit path.

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19.   Apparatus, comprising:

a network manager, for determining a circuit path between a source node and a destination node within a network comprising a plurality of nodes; and

10   a data base, for storing a respective bandwidth utilization level for each of a plurality of links interconnecting said nodes;

said network manager determining said circuit path by iteratively selecting appropriate next nodes according to a

15   shortest path algorithm, determining whether a link communicating with said selected next node has associated with it a bandwidth utilization level exceeding a threshold level, and selecting an alternative next node in the case of said link having associated with it a bandwidth utilization level

20   exceeding said threshold level.

20.   The apparatus of claim 19, wherein:

in the case of a plurality of alternative next nodes having respective links with bandwidth utilization levels above

25   said threshold level, adjusting said threshold level.